

## CLAIMS

1. Pipetting method for simultaneous pipetting of a plurality of sample wells (44) or containers by means of a multichannel pipetting apparatus (40) comprising a pipetting unit (10) provided with a plurality of pipetting channels (12), according to which method
  - the pipetting channels (12) of the multichannel pipetting unit (10) are divided into groups, at least some of which comprise two or more pipetting channels, and
  - the pipetting tips (20) of the pipetting unit (10) are so connected to the groups of pipetting channels (12) that each pipetting tip communicates with all the pipetting channels of one group,
 c h a r a c t e r i s e d in that
  - the groups of two or more pipetting channels (12) of the pipetting unit (10) are connected to the pipetting tips (20) by bringing between the pipetting channels and the pipetting tips an adapter (30) containing several channels (31),
  - by means of the adapter (30), each one of two or more groups of pipetting channels (12) is connected to a separate pipetting tip (20) via a channel (31) or channel group in the adapter (30) that is in alignment with the group,
  - and that the channel (31) or channel group in the adapter (30) is connected to the pipetting tip (20), which preferably is a conventional, funnel-shaped pipetting tip.
2. Pipetting method as defined in claim 1, c h a r a c t e r i s e d in that
  - the adapter between the pipetting channels (12) and the pipetting tips (20) is replaced with a different adapter (30) depending on the number of pipetting channels comprised in the group to be connected to each pipetting tip.
3. Pipetting method as defined in claim 1, c h a r a c t e r i s e d in that
  - the adapter (30) placed between the pipetting channels (12) and the pipetting tips (20) is moved in lateral direction so that the desired channel (31) or channel group is brought to a position directly opposite to the selected pipetting channels, said selection being made according to the number of pipetting channels comprised in the group to be connected to each pipetting tip.
4. Pipetting method as defined in claim 1, c h a r a c t e r i s e d in that
  - by means of the adapter (30) movable in the pipetting apparatus (40), the pipetting tips (20) to be connected to the adapter are fetched according to the size of the sample wells (44) or containers to be pipetted, whereupon the adapter is moved laterally so that the channel (31) or channel group in the adapter which is in alignment

with the pipetting tip comes to a position directly opposite to the desired group of pipetting channels, this selection being made according to the number of pipetting channels comprised in the group to be connected to each pipetting tip.

- 5 5. Multichannel pipetting apparatus (40) for simultaneous pipetting of a plurality of sample wells (44) or containers, said pipetting apparatus comprising
  - a pipetting unit (10) comprising a number of pipetting channels (12),
  - in which pipetting apparatus the pipetting channels (12) have been divided into groups, at least some of which comprise two or more pipetting channels,
  - 10 - and the pipetting tips (20) of the pipetting unit (10) are connected to the groups of pipetting channels (12) so that each pipetting tip communicates with all the pipetting channels in one group,

characterized in that

  - the pipetting unit (10) of the pipetting apparatus (40) comprises at least one adapter (30) placed between the pipetting channels (12) and the pipetting tips (20) and containing a number of channels (31) or channel groups connecting the groups of pipetting channels to the pipetting tips,
  - and that each channel (31) or channel group in the adapter (30) is connected to one group of pipetting channels (12) and via an orifice (32) to one pipetting tip (20), which preferably is a conventional, funnel-shaped pipetting tip.
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6. Pipetting apparatus (40) as defined in claim 5, characterized in that

  - the pipetting unit (10) comprises at least two different adapters (30) which can be alternately placed in the pipetting unit, between the pipetting channels (12) and the pipetting tips (20),
  - the adapters (30) contain different channels (31) or channel groups,
  - that the channels (31) or channel groups in different adapters (30) differ from each other in that a different number of pipetting channels (12) can be connected via them to each pipetting tip (20).
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7. Pipetting apparatus (40) as defined in claim 5, characterized in that

  - the pipetting unit (10) comprises an adapter (30) comprising at least two different zones (22) containing different channels (31) or channel groups,
  - the channels (31) or channel groups located in different zones (22) of the adapter (30) differ from each other in that a different number of pipetting channels (12) can be connected via them to each pipetting tip (20), and that
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- the adapter (30) can be displaced or moved so as to bring different zones (22) alternately into connection with the pipetting channels (12).
8. Pipetting apparatus (40) as defined in claim 5, 6 or 7, c h a r a c t e r i s e d in that
- 5 - the pipetting apparatus (40) comprises a track (41) for moving micro-sample plates (42) laterally to a position directly opposite to the pipetting unit (10),
  - the pipetting unit (10) contains one or more adapters (30) which can be moved above the track (41) in a direction perpendicular to the direction of movement of the track, and that
  - 10 - one or more adapters contain two or more different zones (22) containing channels (31) or channel groups which connect a different number of pipetting channels (12) to each pipetting tip (20).
9. Pipetting apparatus (40) as defined in any one of claims 5-8, c h a r a c t e r i s e d in that, using one or more adapters (30), the pipetting apparatus (40) forms an apparatus that replaces at least two previously known pipetting apparatuses.
10. Pipetting apparatus (40) as defined in any one of claims 5-9, c h a r a c t e r i s e d in that the adapter (30) is provided with a plurality of pipetting tips (20) or pipetting tip connecting elements (15) fixedly attached to it.
- 20 11. Pipetting apparatus (40) as defined in any one of claims 5-10, c h a r a c t e r i s e d in that the channels (31) or channel groups of the adapter (30) are fitted against a seal (14a) on the lower surface (17) of the frame (16) of the pipetting unit (10) or against suitable connecting elements (15).
- 25 12. Pipetting apparatus (40) as defined in any one of claims 5-11, c h a r a c t e r i s e d in that the pipetting tips (20) are fitted against a seal (14b) on the lower surface of the adapter (30) or against suitable connecting elements (15).